

# PROCEEDINGS

of the  
American Society  
of  
Civil Engineers

2 PARTS

PART 2

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No. 9

## New Orleans 1877

(Continued)

The account of the New Orleans meeting, in 1877, seemed to provide so many interesting items that to reproduce them all in one issue was impossible. Hence the insertion of further extracts from the pamphlet in the library of Mr. Quimby, providing an account of the meeting of 52 years ago.

"Upon the morning of April 27th, a party numbering about one hundred and forty persons, including the members of the American Society of Civil Engineers and their ladies, with many prominent residents of the Crescent City, embarked upon the steamer, *La Belle*, to inspect the engineering works at the south pass of the Delta, known as jetties.



At a distance of some forty

miles from our starting point, we were treated to a couple of hours' inspection of a representative plantation, and enjoyed a taste of regular old-fashioned, whole-souled Southern hospitality."

"Speeches, that great American prerogative, were then in order, and soon, with a parting cheer, we were on our way down the river again."

"Shortly before sunset, a continued stiff breeze had so disturbed the waters of the stream that our craft was obliged to tie up beside the levee, beside a swamp filled with small trees, which kept the wind away, and at the same time enabled the swarms of insatiate mosquitoes to accomplish their deadly mission. Through all the long watches of the night, the combined horns of countless insects made the air heavy with

their melody, while the agonizing fusilade of slaps, by their victims, gave a staccato-like tone to the concert."

"The upper end of jetties at Port Eads was reached about eight o'clock. Here were found the several buildings used in constructing the mats and other essentials to the work; also a comfortable hotel and a small fleet of pile-drivers, schooners and steamboats. The mode of preparing the mats is peculiar. They are constructed of willow branches, which grow in profusion at the 'Jump', above. These are laid upon a framework varying in size from 100 feet to about 25 feet in length, and of proportionate width. Stout hickory pins about 18 inches long are set into the framework, and the willows are placed in four layers, at alternate right angles, after which binding strips are put on, and held in place by the hickory pins. The ends are then trimmed, and the mat, or more properly, 'mattress', is ready for launching. A steam tug tows it to its proper position, and it is moored to piles already driven, and anchored securely, when it is sunk by a burden of heavy stones.

"This operation is repeated until six mats have been located, each having a layer of stone over it, the top dressing being the heaviest. The effect is to confine the impetuous waters of the river in a channel and project

(Continued on page 4)

## "Getting Together"

FACULTY Sponsors, Student Chapter officers and student members to the number of 66, representing 18 institutions, and 16 other listeners (at least one of whom signed himself as "interested") sat in at the meeting called by the Committee on Student Chapters at 4 o'clock on Wednesday in connection with the Boston meeting.

The agenda, prepared by the Committee, included papers on "What the Local Section Can Do to Help the Student Chapter", and "Ways in Which a Faculty Sponsor May Help the Chapter". A method of allowing academic credit for Student Chapter activities was explained. There was also a demonstration of one of the new lantern-lectures prepared for the use of Student Chapters.

Without a doubt, the high point of the meeting was reached in the discussion from Student Delegates which followed the prepared program. Upon being asked to describe methods of conducting meetings, relations with Sponsors and Local Sections, etc., or any other subject they might have on their minds, the Chapter officers went into action in fine style.

Some schools give academic credit for Chapter activities, although most do not; in some schools attendance at meetings is compulsory; in one, authors of papers are relieved from other required abstracts; one Chapter expects its sophomore and junior members to report on summer employment activities, later the senior members discuss their theses (this Chapter has found that more than 50% of its attendance is attracted by these papers); one student representative explained the method of collecting dues through the "student blanket fee". At one school, "feeds" appeared to be the principal

pulling power, the announcement of talks by very prominent engineers only excepted.

A common report was that the idea of "payment" for attendance at meetings or the preparation of papers was disliked.

One student representative noted a great difference in manner between engineers at meetings, such as then going on, and in the classroom; and entered an earnest plea that faculty members attend the Student Chapter meetings more frequently and in the rôle of human beings, rather than as professors.

Altogether this meeting was decidedly worth while and shows that these eighteen Chapters, scattered from Maine to Pennsylvania, are awake to their responsibilities and opportunities, and are eager to make their own activities of maximum interest and benefit to their members.

## A Binding Expedient

**A**LTHOUGH arranged in three series of page numberings, the contents of Part I of Proceedings fall in two general classifications: *i.e.*, technical papers and their discussions, some of which may not be reprinted in Transactions; and, Society news, Division reports, progress reports, current engineering literature, etc. Where shelf space is available, it is probably simplest to preserve the entire copy, especially as the annual index to Proceedings covers the complete contents.

When space or weight or limited interest governs, the method of filing reported by one member might be used. After the binding staples are removed, the articles desired are slipped into folders 6½ x 9 inches. When the subject is completed, as by the author's closure, a common office stapling machine re-binds the printed pages, and the addition of a title completes the pamphlet. This member reports the whole process as not requiring much time even if several months' accumulation is done at once, and that the added convenience justifies the work. It is his contention that kindred subjects may be more readily filed together; the article is available somewhat before its appearance in Transactions; material of transient interest does not survive.

If a method like the above is too bothersome, or the time element is immaterial, the separate reprints of

those papers which appear in Transactions may be purchased for a nominal sum.

Teachers may find it convenient to use the separate pamphlets, and will likely discover less wear and tear in the bound volumes from normal use by students.

Another use for these separated articles was suggested by a member who has had occasion to address clubs, luncheons and other social gatherings. He loans articles to interested persons, particularly when the presentation is not too technical. Emphasis on the article in question is secured by its separation from irrelevant matter.

## Accept It!

**T**HE following true tale was related in Boston, and will not spoil for re-telling.

A certain young man was graduated in civil engineering some years ago, and got a job in, say, Milltown. After a few years of earnest labor, and while he appeared to be getting along very well, he received the following cryptic note from one of his former professors: "You will shortly receive an offer from a certain Railroad. Accept it!"

In due time the offer did arrive, and the young man did accept it, at a smaller salary. Shortly afterward, he visited the professor and asked why he had been urged to take this apparently backward step.

"Young man," was the reply, "you are going to grow, and Milltown isn't! You ought to change."

A few days ago, the same man went through Milltown. The town has not grown a bit, but the man is now the vice-president of a nationally known railroad.

## Arbitration

**A** WARNING on arbitration clauses in commercial contracts is issued by the American Arbitration Association in the following terms:

"Arbitration clauses are being used effectively in many such contracts; but unless they are technically and legally correct they do not fully carry out the intention of the parties and of the arbitration law and the court may be called upon to set aside the award."

The Association offers to supply copies of legally correct clauses as well as tests by which the legality of existing clauses may be judged.

## The Fowler Awards

**N**OW is a good time to fix in mind the matter of the Fowler Awards:—the Professional Award and the Architectural Award. These Awards are conferred in July, but they are determined by the Board of Direction in April. The respective Committees, therefore, will be considering applicants in, say, February or March of next year.

With respect, first, to the Professional Award. It is rather difficult for a member to set himself up as eligible for such an honor, but there is nothing inappropriate in his friends doing so for him. How else could it be better done? Such friends are in possession of the facts and can with accuracy, vigor, and also propriety, present these facts to the Committee for its consideration. The terms are, as follows:

This Award is to be made for some notable achievement for the advancement of the Engineering Profession in either its ethical, material, or physical aspects.

The Award preferably is to be made for the accomplishment of an individual whose work may have been in the interest of a large group, or a certain class or a branch of the profession. Betterment of the profession, brought about through teaching, authorship of a book or paper, the effect of legislation, etc., may also be the basis of the Award. The mere publication of an article or the sponsorship of an idea or principle is not to be considered as fulfilling the requirements of the Award.

Eligibility for the Architectural Award may be considered exactly in the same manner, although it seems, in this instance, that the engineer himself also and with full propriety might transmit photographs of his work for the consideration of the Committee. Its decision must be based largely on photographs and conceivably it should have, say, 200 photographs from perhaps 50 or even 150 different designers to aid to a proper conclusion.

The terms of this Award are as follows:

This Award shall preferably be made for a work of outstanding merit in the architectural design of a bridge. In default of a meritorious bridge design, the Award may be made for the artistic design of other engineering work, such as a Dam, Water Tower, Tunnel Portal, Power House, Light-House, or other structures susceptible of architectural treatment.

The designs for which the Award is made must be fundamentally artistic, complying with the principles of Simplicity, Symmetry, Harmony, and Proportion, and not merely a structure decorated with Classic, Renaissance, Romanesque, or other architectural details or trimmings. Constructed, and not projected, work shall



form the basis of the Award.

It is highly desirable, of course, that these awards be based on real competition. The respective Committees cannot be expected to make themselves familiar with the entire field. Logically, therefore, the claims of the respective eligibles should be thoroughly brought to their attention. It is not too soon to begin.

## Hospitality

THE Northeastern Section enlisted sixty-five of its members and twenty-one of the ladies for its local committees, and to them goes the credit for the completeness and smoothness of the arrangements for the Fall Society Meeting. No part of the general plan had to be changed, and minor emergency needs were met almost before they became known. The Executive Committee maintained a separate room at the hotel throughout the sessions, with telephone and an attendant, copies of programs, maps and other literature. This headquarters was independent of the general registration organization, and proved its worth by relieving the latter of much detailed business, especially the making of arrangements by telephone.

Of course, the formalities of registration, the making of badges, sale of tickets for functions, etc., are a familiar story to those who have attended meetings of the Society. These arrangements can be made only by the local committees, and consume many hours of freely donated time. Likewise, finances must be budgeted, various hotel arrangements settled, general entertainment selected (to say nothing of sifting out the many suggestions of volunteer advisers), publicity to be prepared both for the public and for the membership within the area, transportation engaged, plans for the ladies scheduled, and many other details allocated to some one or another for action.

It is indeed proof of a well organized office and household that they continue to function while the committeeman and his wife devote all their time to the entertainment of the visitors.

This practical evidence of hospitality has placed Boston for the third time high on the long list of communities which, without exception, have outdone themselves to entertain the American Society of Civil Engineers.

## Allen P. Richmond, Jr.

*Assistant to the Secretary*

THE work of the Society is done by its members through a large number of committees. Technical Divisions are busy; Special Committees are wrestling with their specific problems; Standing Committees of the Board of Direction find plenty to do. For some time it has appeared desirable to co-ordinate certain features of this committee work through some one person. Mr. Allen P. Richmond, Jr., Associate Member, joined the staff at Headquarters in late September and will devote a large part of his time to such matters. A portion of this work was formerly done by Ralph H. Mann, Associate Member, who recently made other connections in the practice of engineering.

Mr. Richmond is a native of New Hampshire, was graduated from Dartmouth College in 1914, and received his C. E. degree from Thayer School of Civil Engineering in 1915. He was an assistant engineer at Central Aguirre, Porto Rico, for two years, leaving to enter the Army in 1917 as First Lieutenant of Field Artillery. His service was with the 301st Trench Mortar Battery, largely at the Trench Artillery School in France.

After discharge in 1919, a short period on surveys in Preston, Cuba, was followed by a year as Instructor in Graphics at Dartmouth College and nine years as Assistant Professor of Civil Engineering at Thayer School. Mr. Richmond also holds a commission as Major in Field Artillery—Reserve.

## November Proceedings

THE technical papers in the November Proceedings start and end with construction topics. The first, by Searcy B. Slack, Member, is entitled "The Behavior of a Reinforced Concrete Arch During Construction. Complete tests and measurements, continued throughout the entire period of building, gave valuable information as to temperature corrections, abutment movement, and actual stresses.

An easy "Adjustment of Transit and Stadia Traverses" is suggested by Howard S. Rappleye, Associate Member. In this general method,

angle measurements are usually accurate, hence the closing of the traverse is made by correcting the lengths only. Mr. Rappleye's convenient rules are based on the theory of least squares. An example illustrates how really simple the resulting adjustments become.

"Factors Governing the Location of Airports" are described in logical and orderly fashion by Donald M. Baker, Member. After noting the requirements for most satisfactory design, construction, and operation, he suggests a mechanical rating for evaluating the general worth of the various sites available.

Four papers delivered at the San Diego Meeting a year ago comprise a Symposium on High Dams. Regarding "Experience and Outlook for the Future", A. J. Wiley, Member, concludes that such structures will be of solid masonry gravity section, either straight or arched, the latter preferred. In the next paper, D. C. Henny, Member, deals with "Classification, Selection, and Adaptation". In so doing he considers foundation requirements, conditions limiting height, and sources of danger.

Still another phase is "The Viewpoint of the Geologist" by F. L. Ransome, of the California Institute of Technology. After mentioning the various irregularities with which the geologist has to deal, Professor Ransome shows the relation of the problems involved to fundamental requisites of strength, imperviousness, stability of position, and unchangeability in physical characteristics. A paper on "Construction Methods and Plant Layout at Coolidge Dam, in Arizona", by J. G. Tripp, Member, concludes the Symposium. His description of the site, and the sequence of various operations gives a pleasing picture of this unique piece of work.

The last paper deals with another large concrete job, the "Construction of the James River Bridge Project" as described by R. C. Wilson, Esq., and Herbert B. Pope, Associate Member. Most interesting features of the management and construction are described. Economic considerations leading to changes in design and load tests on the piles are also explained.

Immediately following are 19 discussions on 10 current Society papers. Memoirs of 13 deceased members conclude the November Proceedings.

## New Orleans 1877

(Continued from page 1)

the current, heavy with sediment, far out into the deep waters of the gulf. This sediment is washed inward on either side of the jetties, forming shoals where deep water formerly existed, and thus effectually protecting the works from the havoc of the waves. Captain Eads undertakes to keep the channel open for twenty years for the sum of \$100,000 per annum.

"Now a word as to the significance of the jetties. If they are maintained, and a reliable channel is made, which will permit the largest ships to come



up to the wharves, the future of New Orleans and the cities of the Mississippi valley will be very bright. The immense grain and cotton shipments will be diverted largely from the railroads, and sent to eastern ports or foreign countries by steamship. The people of Louisiana, believing that the incubus of political anarchy is gone forever, are hopeful, and capital is seeking investment."

"Viewed from the roof of the Custom House, New Orleans presents a very beautiful scene. It is noticeable that nearly every building, either commercial or private, has its own gable roof of tiles and slate. The inference is that rain water has an appreciable value."

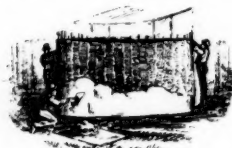
"New Orleans needs drainage. General Beauregard told me that two millions of dollars, in round figures, would give the city a good sewerage system, and save hundreds of lives annually."

"Leaving the Crescent City upon the morning of May 1st, our party, the Civil Engineers Society, began its return journey by way of Galveston, Houston, and the Indian Territory."

"It is proper to say that the mode by which it is expected to open a channel for large vessels to the wharves of the city (Galveston), is an innovation in marine engineering. The forces of Nature are to be captured and put at work, as at the South Pass, but the manner of chaining them is radically different. Captain Eads finds his ally in the sedi-

ment held in solution and brought down by the mighty river. Major Howell has the influx and reflux of the tide to deal with, and a quicksand to build upon, into the depths of which stone disappears in a moment. It was found needful, therefore, to build the jetties of some material of about the same specific gravity as the sand. To this end the 'gabionade' was projected, the idea being adopted from the gabions used in military engineering for rapid fortifications, merely willow or wicket baskets filled with earth.

"At the end of a long line of piling we found a working boat and two flats, upon which a number of gabions, and the mats upon which they are placed, reposed. Though a rather strong sea was running, we were treated to a view of the manner of launching a gabion. The first operation is the placing of a mat, which is built of willow refuse, and is about 8 by 12 feet in size. It is held in position by concrete blocks until sand enough is deposited to anchor it, when the blocks are removed. The gabions are constructed of willow, with board base and top, being a rectangle with round corners, and about 8 feet high. They are plastered, without and within, with



concrete cement until the walls are about 5 inches thick. A man-hole is left in the top. The gabion having been moved beside its destined bed, is launched and filled with water from a steam-pump, which is afterward displaced by sand. The line is continued in this manner. The tide being arrested outside of the line, deposits sand against the gabionades and thus forms the banks of the channel.

"The line of gabions is termed a gabionade. These are two in number, and, when completed, the north one will be 3 miles in length and that on the south nearly 4 miles long, with 2 miles of water between them. The estimated cost is \$8 per running foot. The first appropriation was made by Congress in September, 1874, of \$50,000. Two others have been made since, of \$150,000 and \$142,000. The gabions already in position successfully resisted a cyclone which devastated the harbor in 1875."

## Side Lights

*Suggested by the Boston Meeting*

A rather unusual knife was picked up at the Boston meeting. Its nature is such that the owner will doubtless wish to communicate with Prof. J. B. Babcock, Room, 1-337, M. I. T., Cambridge, Mass.

Tufts men, members of the Society, together with those in other branches of engineering work, seized the occasion of the Boston meeting to have lunch together on Thursday. Thirty-six were present.

This suggests the possibility of similar luncheons at other meetings. One has to eat anyway, and a single energetic committeeman can arrange with maximum efficiency to feed 50 as easily as himself alone.

Flaming autumn foliage, the blue Atlantic, the "stern and rock-bound coast", a cloudless sky, a New England shore dinner, boxes of prize McIntosh-Red apples from the Brockton Fair and a motorcycle escort that guaranteed rapid headway, all combined to make the Friday excursion one long to be remembered.

It is interesting to note that two of those in attendance at the New Orleans meeting in 1877 were present at the Boston meeting in 1929. They were C. Frank Allen and Frank O. Whitney, both Life Members.

The latter recalled vividly the visit to the Crescent City and incidents en route. In particular he stated that only three members stopped over to visit Mammoth Cave, and that all three are alive today—Clemens Herschel, Professor Allen, and himself—thereby laying themselves open to the suspicion that they must have tapped a subterranean channel of the Fountain of Youth.

Although it has been said that the Society has held no meeting in Boston since 1878, perhaps the meeting at Hull, in 1895, some 15 miles away, should be rated as a Boston meeting since the use of the Hotel Pemberton at Hull was due solely to the lack of hotel accommodations in Boston adequate to house under one roof the 650 members and guests who attended.

In the very early days of the Society, invitations to join were issued to prominent engineers.

A certain Edw. C. Cabot, writing from Boston under date of November 24, 1882, in answer to a circular about the new Society, forwarded from New York, and an invitation to become a member, declined the honor, giving as one of his reasons that "Members at this distance could hardly expect to attend the meetings with certainty."

Quite a few of the members took the opportunity to call on one of the newest Honorary Members, Professor George F. Swain, who is confined to his home by illness.

Other Honorary Members elected at the same time as Professor Swain were Edwin A. Fisher and Gustav Lindenthal.

The Surveying and Mapping Division was decidedly popular, with nearly twice as large an attendance as either of the other simultaneous sessions. This appears to enroll New Englanders as enthusiastic backers of the efforts of this Division.